

## CLAIMS

What is claimed is:

- 5           1. A corner free structure of a nonvolatile memory, comprising:  
a substrate;  
at least a trench isolation device comprising a first portion on  
said substrate and a second portion in said substrate; and  
a spacer at a sidewall of said first portion, wherein said spacer  
10 covers a corner between said sidewall and said substrate.
2. The structure according to claim 1, further comprises at least  
a nonvolatile memory using said trench isolation device.
- 15           3. The structure according to claim 1, wherein said spacer is  
deposited silicon dioxide.
4. The structure according to claim 1, wherein said spacer is  
deposited silicon nitride or other isolated materials.  
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5. The structure according to claim 1, wherein a formation of  
said spacer comprises following steps:  
depositing a dielectric material layer onto said substrate and  
said trench isolation device; and  
25 etching said dielectric material layer to form said spacer at said  
sidewall of said first portion.
6. The structure according to claim 1, wherein said trench

isolation device is shallow trench isolation.

7. A corner free structure of nonvolatile memory, comprising:  
a substrate;

5 a plurality of trench isolation device, each of said trench  
isolation devices comprises a first portion on said substrate and a  
second portion in said substrate;  
a spacer at a sidewall of said first portion, wherein said spacer  
covers a corner between said sidewall and said substrate; and  
10 at least a nonvolatile memory using said trench isolation device.

8. The structure according to claim 7, wherein said trench  
isolation device is shallow trench isolation.

15 9. The structure according to claim 7, wherein said nonvolatile  
memory is flash memory.

10. The structure according to claim 7, wherein a formation of  
said spacer comprises following steps:

20 depositing a dielectric material layer onto said substrate and  
said trench isolation device; and  
etching said dielectric material layer to form said spacer at said  
sidewall of said first portion.

25 11. The structure according to claim 7, wherein said spacer is  
deposited silicon dioxide.

12. The structure according to claim 7, wherein said spacer is

deposited silicon nitride.

13. The structure according to claim 7, wherein said nonvolatile memory comprises a tunnel oxide layer.

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14. A corner free structure of nonvolatile memory, comprising:  
a substrate;

a plurality of shallow trench isolation, each of said shallow trench isolations comprises a first portion on said substrate and a  
10 second portion in said substrate;

a spacer at a sidewall of said first portion of said shallow trench isolation, wherein said spacer covers a corner between said sidewall and said substrate; and

at least a flash memory between two of said shallow trench  
15 isolations.

15. The structure according to claim 14, wherein a formation of said spacer comprises following steps:

depositing a dielectric material layer onto said substrate and  
20 said trench isolation device; and

etching said dielectric material layer to form said spacer at said sidewall of said first portion.

16. The structure according to claim 14, wherein said spacer is  
25 deposited silicon dioxide.

17. The structure according to claim 14, wherein said spacer is deposited silicon nitride.